DOCUMENT RESUME

ED 077 445 HE 004 271

AUTHOR	Graziano, Anthony F.
TITLE	The Effect of Inflatien Upon Expenditures of Illinois Public Senior Institutions.
INSTITUTION	Illinois Univ., Champaign.
PUB DATE	[72]
NOTE	14p.
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	Costs; *Economic Development; *Educational Economics; Educational Finance; *Higher Education; *Mcney Systems; Operating Expenses; *Statewide Planning
IDENTIFIERS	*Illinois

ABSTRACT

In this document, the author compares institutional costs at higher education institutions in Illinois between 1958 and 1971. In order to do this, it was necessary to deflate 1971 dollar expenditures and express them in terms of 1958 dollars. Measured in 1958 dollars, expenditures have increased by 397% to $446.7 million using the Consumer Price Index (CPI) factor, and by 298% to $358.2 million using the Gross National Product Implicit Deflator for State and Local Government Purchases of Goods and Services (GNP) factor. Comparisons of cost and outputs are made for state colleges and universities and private institutions within the state. (HS)

FILMED FROM BEST AVAILABLE COPY

ED 077445

VIII

THE EFFECT OF INFLATION UPON EXPENDITURES OF ILLINOIS PUBLIC SENIOR INSTITUTIONS

by

Anthony F. Graziano
Assistant Vice Chancellor for Academic Affairs
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
Champaign, Illinois

HE 004 371

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

THE EFFECT OF INFLATION UPON EXPENDITURES OF ILLINOIS PUBLIC SENIOR INSTITUTIONS

Erosion of Purchasing Power

To obtain a truly significant comparison of growth in expenditures it is necessary to examine *real* changes, that is, the increase in expenditure corrected for any inflation in prices that has occurred since the base year. To understand the full impact of the erosion of the purchasing power of higher education's expenditures, it is necessary to deflate current dollar expenditures and express them in terms of 1958 dollars. Nineteen fifty-eight serves as a convenient reference because it marked the beginning of public higher education's most dramatic growth phase.

Two sets of price indices will serve to make meaningful comparisons of what has happened to total[1] Illinois higher education expenditures from State appropriated funds since 1958. Table 1 presents for the period since 1958 the Consumer Price Index (CPI) and the Gross National Product Implicit Deflator for State and Local Government Purchases of Goods and Services (GNP). The CPI is a composite of several price indices, and services make up approximately 30% of the CPI composite. The GNP is a composite of several price indices, and services make up approximately 50% of the GNP composite. In that higher education expenditures from State appropriated funds consist primarily of services (approximately 70% salaries), the GNP deflator probably provides a more realistic account of what has happened to higher education's purchasing power over time.

---

[1] "Total higher education expenditures" refers to all expenditures from State appropriations for university operations, junior colleges, scholarships, capital projects, and projects under the management of the State Board of Higher Education.

If inflationary factors are applied to the total of all higher education expenditures reported in Table 2, we observe that while the total higher education expenditures have increased by 640% in current dollars since FY'59 ($89.8 million to $665.8 million), inflation has accounted for a large part of this increase. Measured in 1958 dollars, expenditures have increased by 397% to $446.7 million using the CPI factor, and by 298% to $358.2 million using the GNP factor. Figure 1 presents a comparison of the total of higher education expenditures expressed in current dollars, 1958 CPI deflated dollars, and 1958 GNP deflated dollars.

TABLE 1

COMPARISON OF PRICE INDICES AND PRICE DEFLATORS USED TO ADJUST ACTUAL HIGHER EDUCATION EXPENDITURES TO 1958 PURCHASING POWER

FISCAL YEAR	CONSUMER PRICE INDEX (a) (CPI)		GNP IMPLICIT DEFLATOR FOR STATE AND LOCAL PURCHASES (b) (GNP)	
	INDEX	PURCHASING POWER OF THE DOLLAR	INDEX	PURCHASING POWER OF THE DOLLAR
1959	101.5	.985	101.7	.983
1960	103.1	.969	103.9	.962
1961	104.2	.959	107.8	.928
1962	105.4	.949	111.4	.898
1963	106.7	.937	114.7	.872
1964	108.1	.925	117.6	.850
1965	109.9	.910	121.2	.825
1966	113.1	.884	125.0	.800
1967	116.3	.859	130.7	.765
1968	121.2	.825	136.2	.734
1969	127.7	.783	146.2	.684
1970	135.0	.741	155.3	.644
1971	142.0*	.704*	171.5	.583
1972	149.0*	.671*	185.9*	.538*

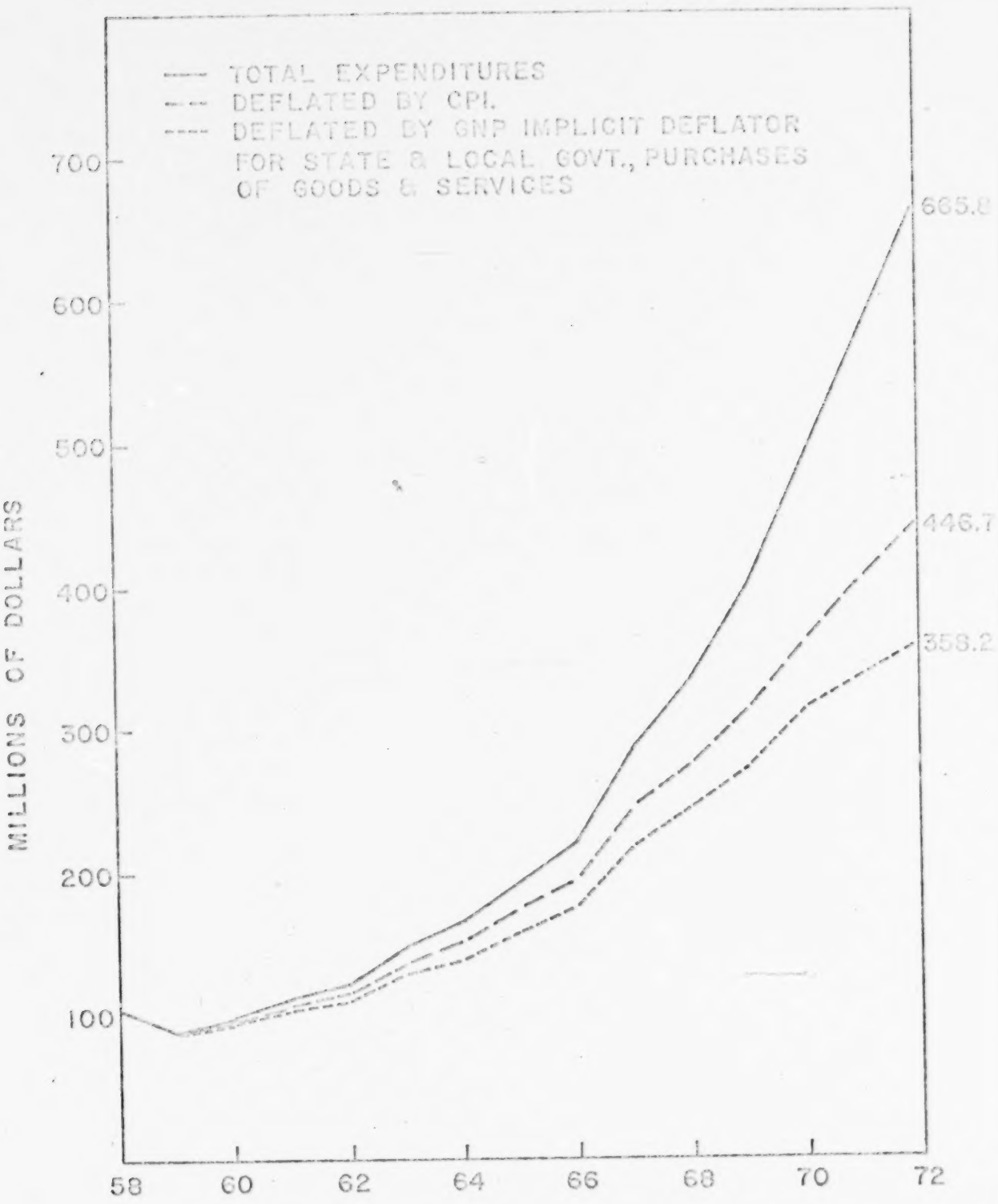
(a) Source: Economic Report of the President (Washington: GPO), February 1971.

(b) Source: Survey of Current Business

* Estimated

FIG. 1

TOTAL HIGHER EDUCATION EXPENDITURES FROM STATE APPROPRIATED FUNDS (GENERAL REVENUE APPROPRIATIONS, INCOME FUNDS, OTHER STATE FUNDS.)



Public University Operations

Table 2 and Figure 2 present the total of higher education expenditures from State appropriated funds and reports these expenditures by major program sector. In current dollars, expenditures for university operations[2] have increased by 398% since 1958, from $81.7 million in FY'59 to $406.7 million in FY'72. If we express these expenditures for university operations in terms of 1958 dollars, we observe that they have increased by 239% using the CPI factor, and by 172% using the GNP factor.

To place these *real* expenditure increases in a more meaningful perspective, Table 3 and Figure 3 present current and deflated State appropriated operating expenditures for university operations compared to several readily defineable and simplistic university "outputs"--degrees, enrollment, and teaching load. Accompanying the real growth of 261% in CPI deflated expenditures between FY'59 and FY'71 is a similar increase of 259% in degrees produced over that period. Accompanying the real growth of 199% in GNP deflated dollars between FY'59 and FY'71 is a larger increase of 208% in enrollment and 209% in teaching loads. And the "productivity" indices shown in Table 3 and Figure 3 do not take into account the mix of students enrolled and graduated from Illinois universities nor do they begin to indicate the substantial increases in research and public services which have occurred since 1958.

In short, Illinois universities have been *at least* as productive in graduating their students as has the Nation been in producing consumer goods and services. And Illinois universities have been *more* productive in terms of absorbing increased teaching loads than has the composite of State and local governments been in delivering their services.

---

[2]University operations include the combination of the four senior public systems--Board of Governors, Board of Regents, Southern Illinois University, and the University of Illinois.

TABLE 2

HIGHER EDUCATION EXPENDITURES (vouchers passed)
FY 1958-1972

	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
Expenditures															
In Budget Book	104.3	89.8	98.5	113.1	122.3*	137.8*	150.7*	179.0*	212.2	267.6	324.0	386.7	476.7	561.4	655.3
Add. Univ. Bldg. Fund, P. and I.	-	-	-	-	-	10.2	13.4	13.2	8.3	17.2	7.9	12.2	9.8	13.4	10.5
TOTAL	104.3	89.8	98.5	113.1	122.3	148.0	164.1	192.2	220.5	285.0	331.9	398.9	486.5	574.8	665.8
Expenditures By Source of Funds															
Income Funds	4.7	10.3	3.2	13.8	8.5	10.5	3.9	17.9	7.1	23.1	5.1	23.8	25.1	37.4	54.3
General Revenue	99.6	79.5	95.3	99.3	113.8	127.3	146.6	161.1	205.1	244.7	318.5	362.3	450.3	520.6	596.8
Other	-	-	-	-	-	10.2	13.4	13.2	8.3	17.2	8.3	12.8	11.1	16.8	14.7
TOTAL	104.3	89.8	98.5	113.1	122.3	148.0	164.1	192.2	220.5	285.0	331.9	398.9	486.5	574.8	665.8
Expenditures By Major Program Sector															
University Operations	74.0	81.7	90.9	102.5	111.5	128.6	135.6	164.9	183.0	223.3	243.5	296.7	356.8	412.3	486.7
(GRF)					(103.0)	(118.1)	(131.7)	(147.0)	(175.9)	(200.2)	(239.2)	(272.7)	(330.9)	(373.7)	(351.2)
Junior Colleges	2.1	2.2	2.6	3.2	3.8	4.7	8.3	6.2	10.0	18.6	24.2	22.4	38.9	48.5	55.5
Scholarships	-	.7	1.1	1.6	1.9	2.2	2.1	3.0	4.4	5.9	10.6	19.4	29.6	37.2	45.2
(GRF)					(1.9)	(2.2)	(2.1)	(3.0)	(4.4)	(5.9)	(10.6)	(19.4)	(28.8)	(35.5)	(42.2)
Health, BHE, Other	-	-	-	-	-	.1	.1	.1	.1	.2	.3	.3	2.6	9.9	26.6
Capital (incl. IBA & UBF)	28.2	5.2	4.0	5.8	5.1	12.4	18.0	18.0	23.0	37.1	53.3	60.1	58.6	66.9	131.7
TOTAL	104.3	89.8	98.5	113.1	122.3	148.0	164.1	192.2	220.5	285.0	331.9	398.9	486.5	574.8	665.8

* Add OSPI grants to normal schools and junior colleges: 116.0 + 6.3 = 122.3
129.9 + 7.9 = 137.8
138.2 + 12.5 = 150.7
168.3 + 10.7 = 179.0

- Data in columns 1958 through 1961 based on figures obtained from staff of SDHE
- Data in columns 1962 through 1971 based on figures reported in annual reports issued by Department of Finance
- Data in column 1972 based on appropriations finally approved by the Governor

AFG:ch
4-14-72

FIG. 2

STATE APPROPRIATED EXPENDITURES BY MAJOR PROGRAM SECTOR, STATE OF ILLINOIS

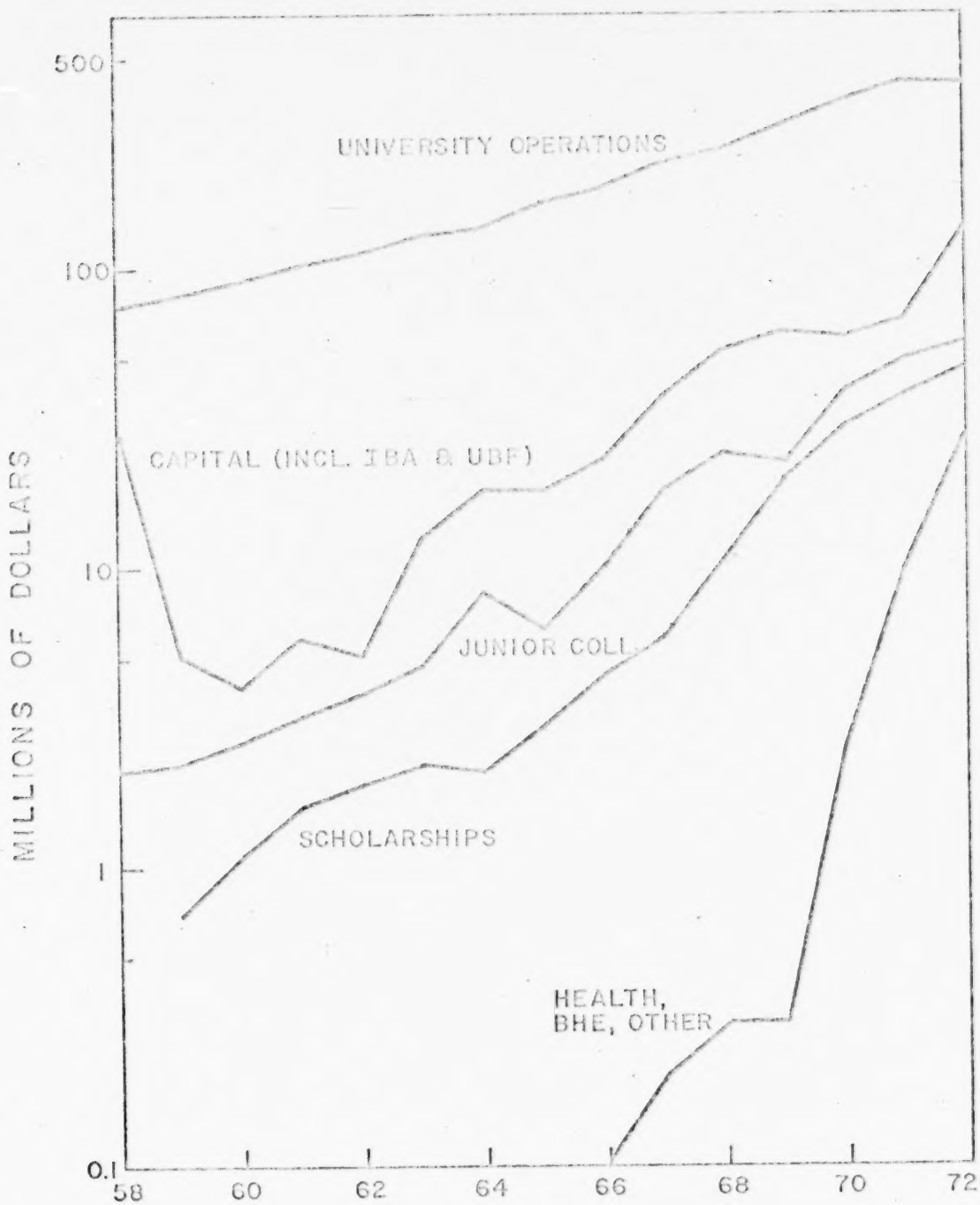


TABLE 3

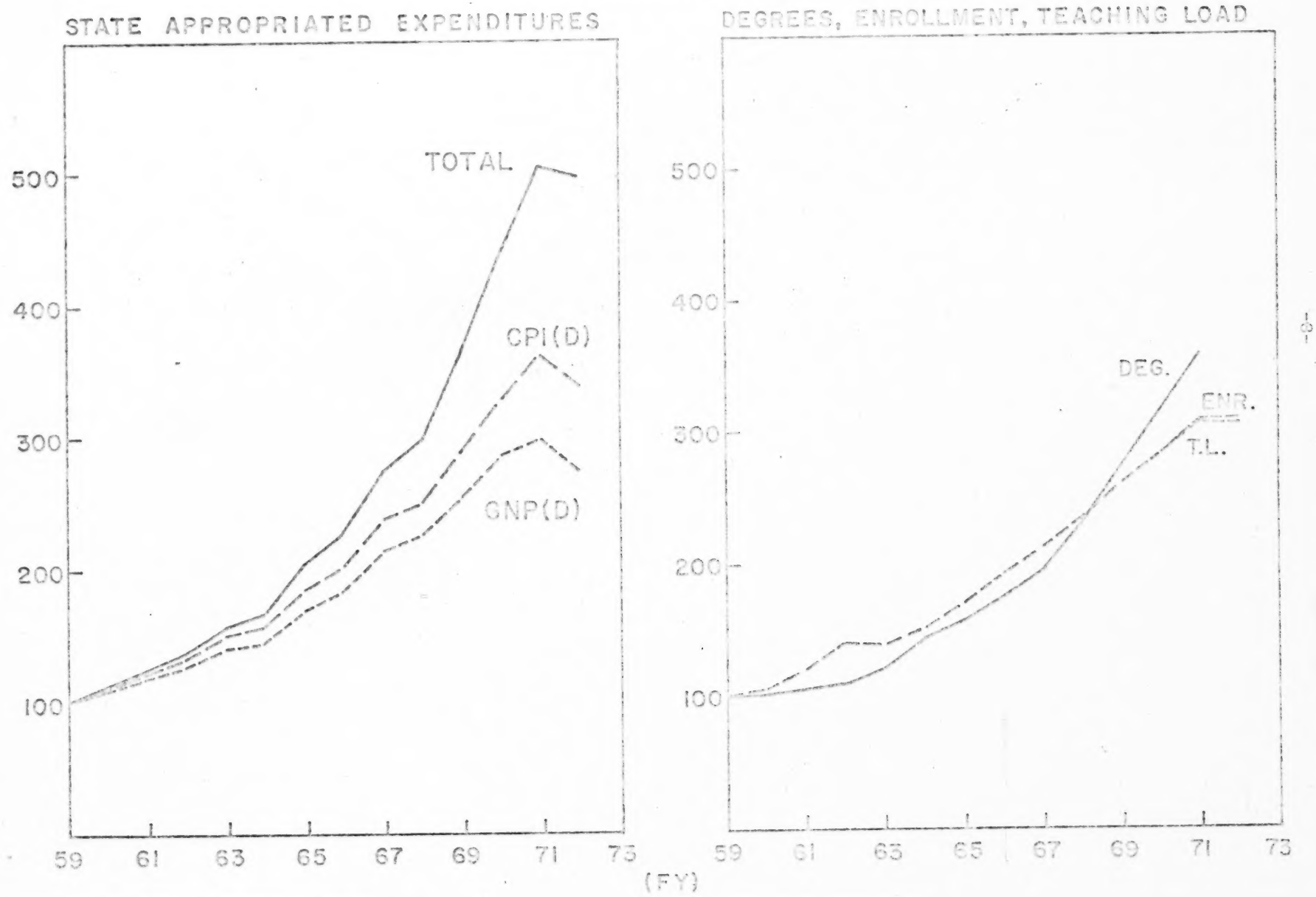
ILLINOIS UNIVERSITIES
A COMPARISON OF EXPENDITURES & "PRODUCTIVITY"

Fiscal Year	Total Expenditures (Millions $)		GNP Def. $ (Millions $)		CPI Def. $ (Millions $)		All Levels Combined					
							Degrees		Enrollment		Teaching Load	
	$	Index	$	Index	$	Index	#'s	Index	#'s	Index	#'s	Index
		100	80.3	100	80.5	100	9,766	100	54,985	100	49,487	100
1960	90.8	111	87.4	109	88.1	109	10,091	103	58,363	106	52,527	106
1961	102.5	125	95.1	118	98.4	122	10,241	105	66,832	122	60,149	122
1962	111.5	136	100.1	125	105.8	131	10,746	110	77,679	141	69,911	141
1963	128.6	157	112.1	140	120.5	150	11,962	122	77,230	140	69,507	140
1964	135.6	166	115.3	144	125.4	156	14,122	145	83,773	152	75,396	152
1965	164.9	202	136.1	169	150.0	186	15,460	158	94,731	172	85,258	172
1966	183.0	224	146.4	182	161.8	201	17,067	175	106,404	194	95,766	194
1967	223.3	273	170.8	213	192.0	239	19,089	195	116,502	212	105,193	213
1968	243.5	298	178.8	223	200.9	250	22,403	229	127,617	232	115,419	233
1969	296.7	363	202.9	253	232.3	289	26,716	274	143,611	261	129,163	261
1970	356.8	437	229.7	286	264.3	328	30,759	315	155,490	283	140,277	283
1971	412.3	504	240.4	299	290.4	361	35,064	359	169,424	308	152,945	309
1972	406.7	498	218.8	272	273.0	339	-	-	168,378	306	153,393	310

AFG:ch
4-21-72

FIG. 3

SENIOR INSTITUTIONS, STATE OF ILLINOIS (1958-1972)
(INDEX)



Without accounting for the differential costs associated with the several levels of student enrollment, and recalling that the GNP deflator provides a more realistic account of the erosion of higher education purchasing power, perhaps the best way of placing the record of growth in perspective is to examine historically the per-student instructional costs of our universities in terms of 1958 GNP "deflated" dollars. These figures are shown in Table 4, where it may be seen that taken as a whole our universities' GNP deflated per-student costs from State funded expenditures have declined when economic inflation is removed, and this was true even before the FY'72 reduction in the operating budgets of Illinois' universities.

TABLE 4

DEFLATED 1958 DOLLARS PER STUDENT
ILLINOIS UNIVERSITIES TAKEN AS A WHOLE

Year	CPI Deflated Per Student Expenditures	GNP Deflated Per Student Expenditures
1959	$1,464	$1,460
1960	1,509	1,497
1961	1,472	1,423
1962	1,362	1,289
1963	1,560	1,451
1964	1,496	1,376
1965	1,583	1,436
1966	1,520	1,375
1967	1,648	1,466
1968	1,574	1,401
1969	1,617	1,412
1970	1,699	1,477
1971	1,714	1,418
1972	1,621	1,299

Public and Private Universities Compared

There exists in Illinois a spectrum of institutional diversity and a complexity of institutional missions and goals which are all too easily overlooked in making intra-comparisons between public institutions let alone making inter-comparisons between public and private institutions. Some of our public universities share with

some of the private institutions more common characteristics and traits than these same public universities share with other public institutions. Nonetheless, when we consider the detailed "accountability" built into the reporting and appropriations procedures for our public universities, the State has embarked upon a policy of comparative indiscriminate support[3] of the private sector. Therefore, it is interesting to compare the relative historic "productivity" of the public senior institutions to the private senior institutions in the State of Illinois.

In attempting to collect the data for such a comparison we can turn only to the annual Higher Education General Information Survey (HEGIS) performed by the U.S. Office of Education--little, if any, data are collected from Illinois private institutions by the State Board of Higher Education. The available HEGIS data have been compiled for the years since 1958 and they are reported in the publication, "A Compilation of Statistics Relative to the Growth of Higher-Education in the State of Illinois," published by the University Bureau of Institutional Research, University of Illinois, February, 1972. Some of the data reported therein are depicted in Figure 4.

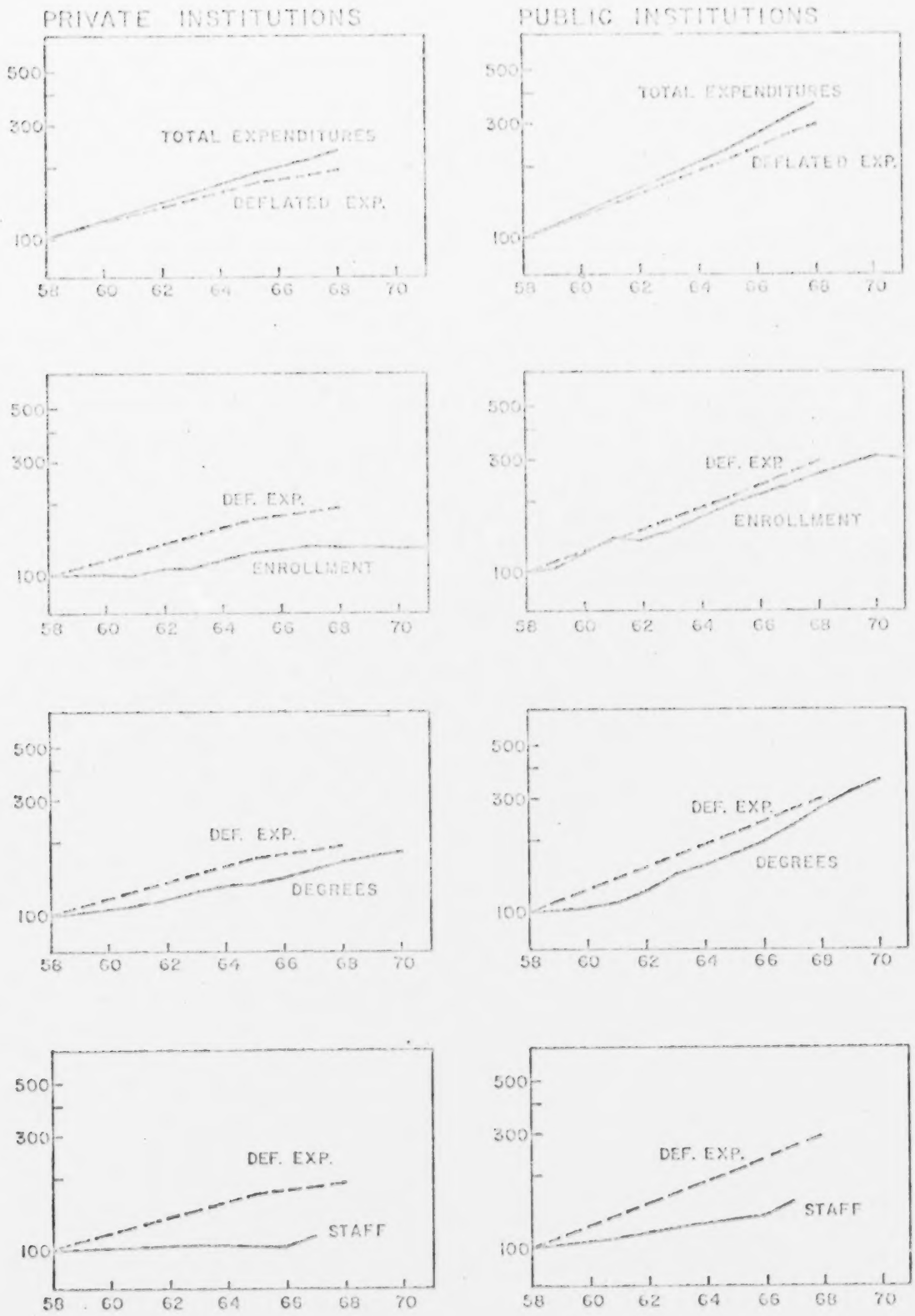
Figure 4 presents for the public and private senior institutions of Illinois a graphical representation of the dollar relationship between CPI deflated expenditures and current expenditures, enrollments, degrees, and staff. The first observation to note is the fact that both sectors have been equally affected by the economic inflation which began accelerating sharply in 1967. (The data for years after 1968 has been collected by the State Board of Higher Education but was

---

[3] This refers to the recent decision to fund each private institution an established dollar amount for each student enrolled. It does not refer to the financial support awarded to students through the Illinois State Scholarship Commission.

FIG. 4

ALL SENIOR INSTITUTIONS, STATE OF ILLINOIS (1958-1971)
(INDEX)



not made available in time for this report.) These CPI deflated expenditures are used as a reference in the subsequent comparisons with enrollment, degrees, and staff.

The comparison of CPI deflated expenditures and related enrollments shows that because the private sector's enrollments have experienced insignificant growth during the 1960's, their expenditure per student has been increasing and will probably continue to increase. On the other hand, increasing enrollments kept pace with increasing expenditures in the public sector and their expenditure per student changed very little over time. Assuming both sectors have been operating with equal efficiency, and with no change in the level of expenditures, the private institutions could have maintained lower costs by (a) increasing their total enrollment, or by (b) shifting the mix of students to the less expensive levels of instruction. The public sector enrollment decline in 1971 indicates that if enrollments stabilize in the public sector during the 1970's, the public sector will likely experience the same per student cost escalation experienced in the private sector during the 1960's.

The comparison of CPI deflated expenditures and related degree awards indicates that in the last half of the 1960's both the private and public sectors have been decreasing their cost per degree produced. This is undoubtedly related in large measure to the expansion of the junior college system which enabled our private and public senior institutions to draw a larger proportion of their student enrollment from the best qualified of high school graduates. During the early 1960's, the private sector was more efficient in the sense of producing degrees at lower cost per degree, but a sharp increase in degree productivity occurred in the public sector as the private sector enrollment stabilized and the public sector expanded to accommodate more of the better academically qualified high school graduates.

The comparison of CPI deflated expenditures and related staffing do not portray significant differences between the two sectors. But what is interesting to note is

the fact that the HEGIS data show that about 1/4 of the faculty in Illinois private institutions have been classified as junior faculty below the rank of instructor and about 1/3 of all faculty in Illinois public institutions have been classified as junior faculty below the rank of instructor. These "junior faculty" are primarily people at the rank of assistant who perform services at a lower salary cost than do people at the higher ranks. Clearly, this implies another significant factor which explains the relative lower cost per student taught in the public sector during the 1960's.